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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/031,317	01/16/2002	Tomohide Takeuchi	52433/675	5887
26646	7590	11/19/2003	EXAMINER	
KENYON & KENYON ONE BROADWAY NEW YORK, NY 10004			MCHENRY, KEVIN L	
			ART UNIT	PAPER NUMBER

1725

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/031,317

Applicant(s)

TAKEUCHI ET AL.

Examiner

Kevin L McHenry

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 5 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 98/35775 in view of JP 4-342,468.

WO 98/35775 teaches a ceramic plate material for the side dams of a twin-drum strip caster. This reference teaches that the ceramic plate material can be made of various suitable ceramic materials, such as BN-Si₃N₄ (see WO 98/35775; particularly Figures 1, 2a-2c, 3; page 8).

WO 98/35775 does not teach a ceramic plate material with the combination of composition and properties claimed by the applicant.

JP 4-342,468 teaches a ceramic that is suitable for use in the continuous casting of carbon steel, stainless steel, and high alloy steel. JP 4-342,468 teaches that the ceramic has a composition of 5-70 wt% BN, 25-75 wt% Si₃N₄, and 3-35 wt% AlN. This reference also teaches that a spinel, such as MgO · Al₂O₃, is added in an amount of 1-15 wt%. JP 4-342,468 teaches that this ceramic composition is advantageous over prior art BN- Si₃N₄ ceramics because it provides improved corrosion resistance and improved strength (see JP 4-342,468; particularly abstract; pages 2-3).

It would have been obvious to one of ordinary skill in the art at the time that the applicant's invention was made to have modified the plate material of WO 98/35775 by

the teachings of JP 4-342,468. One would have been motivated to do so in order to use a ceramic material and composition that provided improved corrosion resistance and strength, as taught by JP 4-342,468. The examiner notes that the ceramic plate material taught above reads upon the composition claimed by the applicant and would therefore have the same mechanical, thermal, and fluid properties claimed by the applicant.

Allowable Subject Matter

3. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter: the instant application is deemed to be directed to a nonobvious improvement over the invention patented in JP 07-68,354. The improvement comprises a ceramic plate for the side dam of a twin-roll strip caster that consists of 5% to 20% BN, more than 15% to 40% AlN, and 40% to 80% Si₃N₄, all percentages in mass percent.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. JP 03-207,554, JP 07-60,411, JP 07-68,354, JP 09-155,509, JP 01-278,944, and JP 09-51,669 are cited for illustrating the state of the art in ceramic compositions for continuous casting.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Response to Arguments

7. Applicant's arguments filed 22 August 2003 have been fully considered but they are not persuasive.

The applicant argues that the claimed ceramic plate material, particularly its properties, is not taught by the references cited in the rejection. However, the references noted in rejection above teach the claimed ceramic plate, particularly a ceramic plate with an Al equivalent mass% of 9% or more. As noted in the applicant's specification on page 5, lines 24-30, such an Al equivalent is met by a ceramic composition with 15%-40% AlN. The references noted above teach 3-35 wt% AlN. Therefore, these references teach the cited ceramic plate material with an Al equivalent of 9% or more. The ceramic plate taught by these references will therefore have the same properties as the ceramic plate cited by the applicant. The references noted in the rejection also meet the cited limitations for BN content and for containing alumina, magnesia, zirconia, or yttria.


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The examiner notes that claims 1, 2, 4, and 5 use broad language for the composition of the ceramic plate and does not limit the composition of the ceramic plate to the composition that is cited in these claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin L McHenry whose telephone number is (703) 305-9626. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G Dunn can be reached on (703) 308-3318. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1234.



Kevin McHenry

